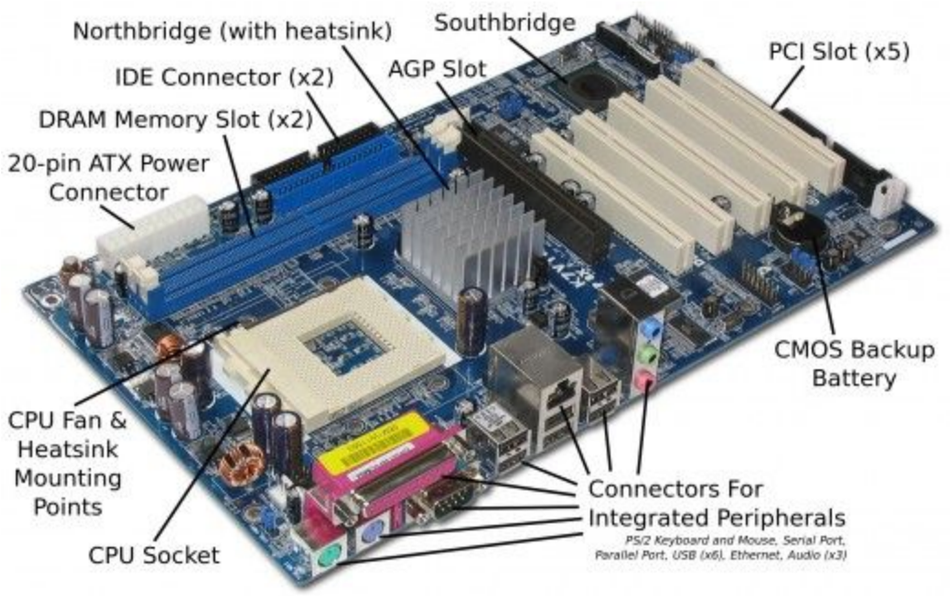
Motherboard Exercise

1. The following is a labelled motherboard for you to use as a reference. Below you will look at different motherboards to become more comfortable labelling all internal components.



For the following two unlabelled motherboards (on the next page), use the diagrams found in the provided link to help you label them from A to L: http://www.buildcomputers.net/motherboard-components.html

Fill in the chart first with a description in your own words of each motherboard component.

Component	**Function (in your own words)**
A. Back panel connectors and ports	It connects the computer to external devices such as display ports audio ports, USB ports etc.
B. CPU Socket	CPU socket is used to place/hold the CPU.
C. Northbridge	Also known as memory controller hub is a chipset that allows the CPU to communicate with RAM and Graphics Card.
D. Southbridge	Also known as the input and output controller (ICH), is a chipset that allows the CPU to communicate with PCI slots, PCI-Express x1 slots (expansion cards), SATA connectors (hard drives, optical drives), USB ports (USB devices), Ethernet ports and on-board audio.
E. ATX Power Connector	It connects to the 24-pin ATX power cable of a power supply unit which supplies power to the motherboard.
F. PCI Express	Slot for newer /modern expansion cards such as sound card, connector card, network card etc.
G. PCI Slot	Slot for older expansion cards such as

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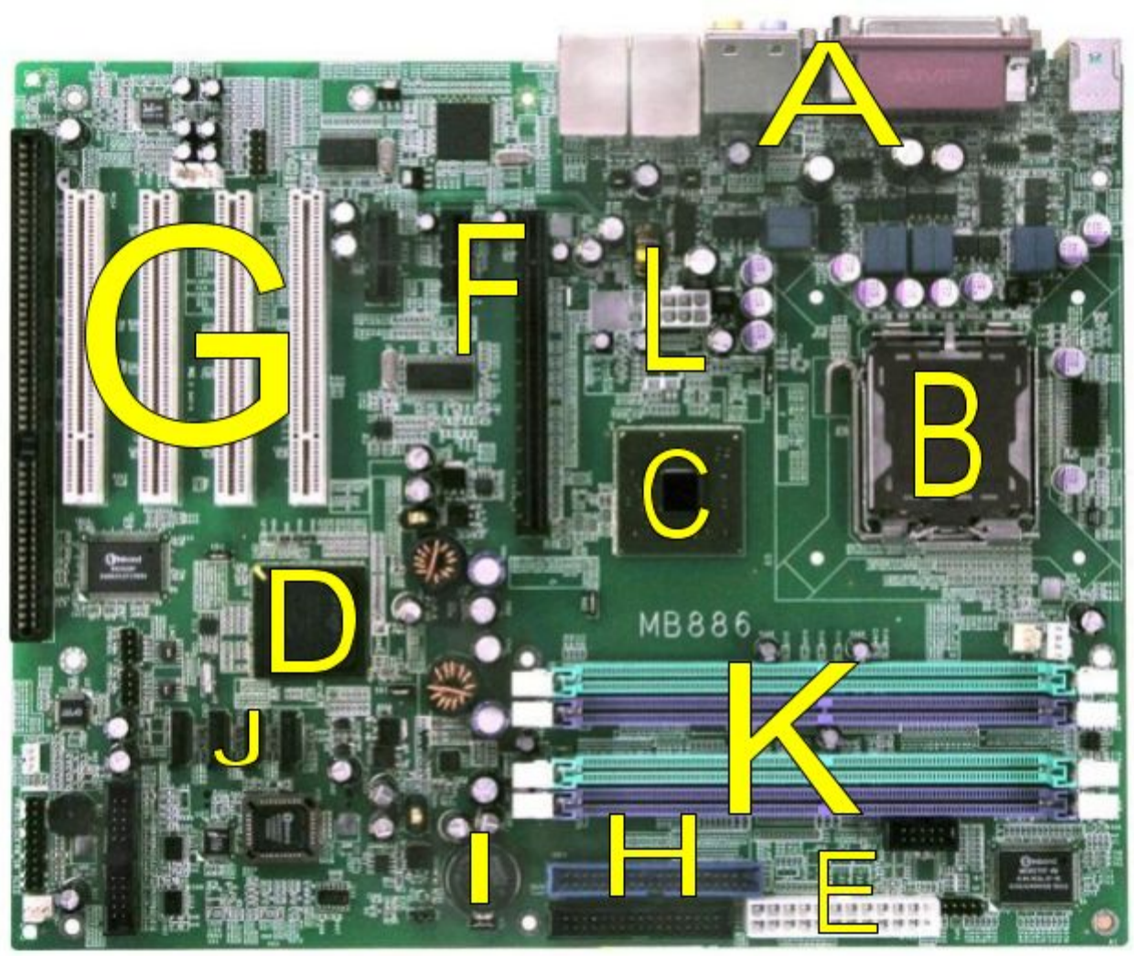
	sound card, network card, connector cards etc.
H. IDE Connector	Used to connect older hard drive disk or/and optical drives to transfer data.
I. CMOS battery	Supplies power to store BIOS (Basic input-output system) and keep the real-time clock running.
J. SATA Connectors	Connects to modern/newest hard disk drives, solid state drives, or/and optical drives to transfer data.
K. RAM Slots	Used to hold/place RAM.
L. ATX 12V Power Connector	Connects to the 24-pin ATX power cable of a power supply unit which supplies power to the motherboard

Picture 1: Label the motherboard below from A to L referenced in the chart above. I have already labelled the Southbridge for you. To label the rest, double-click on the picture to edit it. Once this is done, go to ACTIONS -> Word Art. Type in your letter and press ENTER.



Picture 2: Repeat the same process on the new motherboard

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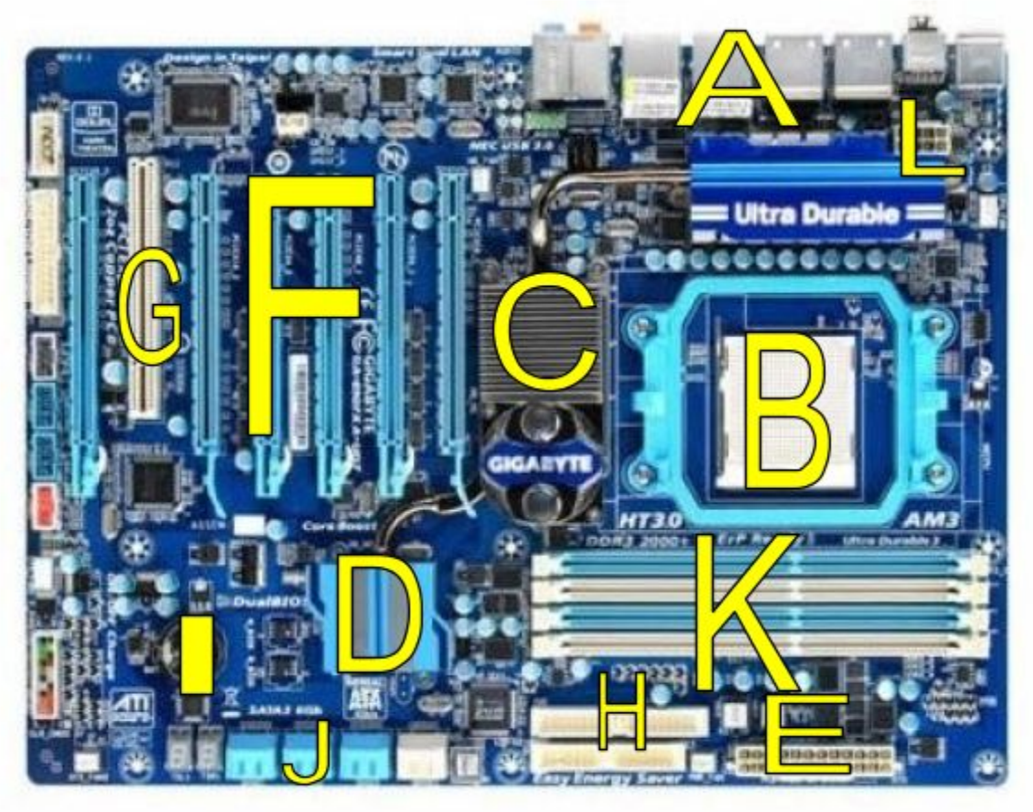

2. What two things does the form factor of a motherboard refer to?
The two things that the form factor of a motherboard refer to are obsolete or developed.

3. Explain the differences between the following form factors: Mini-ITX, MicroATX, and ATX. http://www.buildcomputers.net/motherboard-form-factors.html
The difference between the Mini-ITX, MicroATX, and ATX include: **Different Sizes.** The following form factors all have different sizes as the Mini-ITX maximum size is 17x17cm, MicroATX maximum size is 24.4x24.4cm and the ATX maximum size is 30.5x24.4cm. **Can take different number of RAM Slots.** The following form factors can all take a certain number of RAM Slots as the Mini-ITX can take 2 RAM slots, the MicroATX can take 2-4 RAM Slots, and the ITX can take 2-8 RAM Slots. **Contain different numbers of Expansion Slots.** The following form factors all contain different numbers of expansion slots as the Mini-ATX can contain 1 expansion slot, the MicroATX can contain 2-4 expansion slot and ATX can contain 4-7 expansion slot. **Contain different numbers of Graphics Card** The following form factors can all contain different number of Graphics Card as the Mini-atx can take 0-1 graphics card, the MicroATX can take 1-3 graphics card, and the ATX can take 1-4 graphics card. **Contain different SATA Ports** The following form factors contain different number of SATA Ports as Mini-ATX can take 2-6 SATA Ports, the MicroATX can take 4-8 SATA Ports, and the ATX can take 4-12 SATA Ports.

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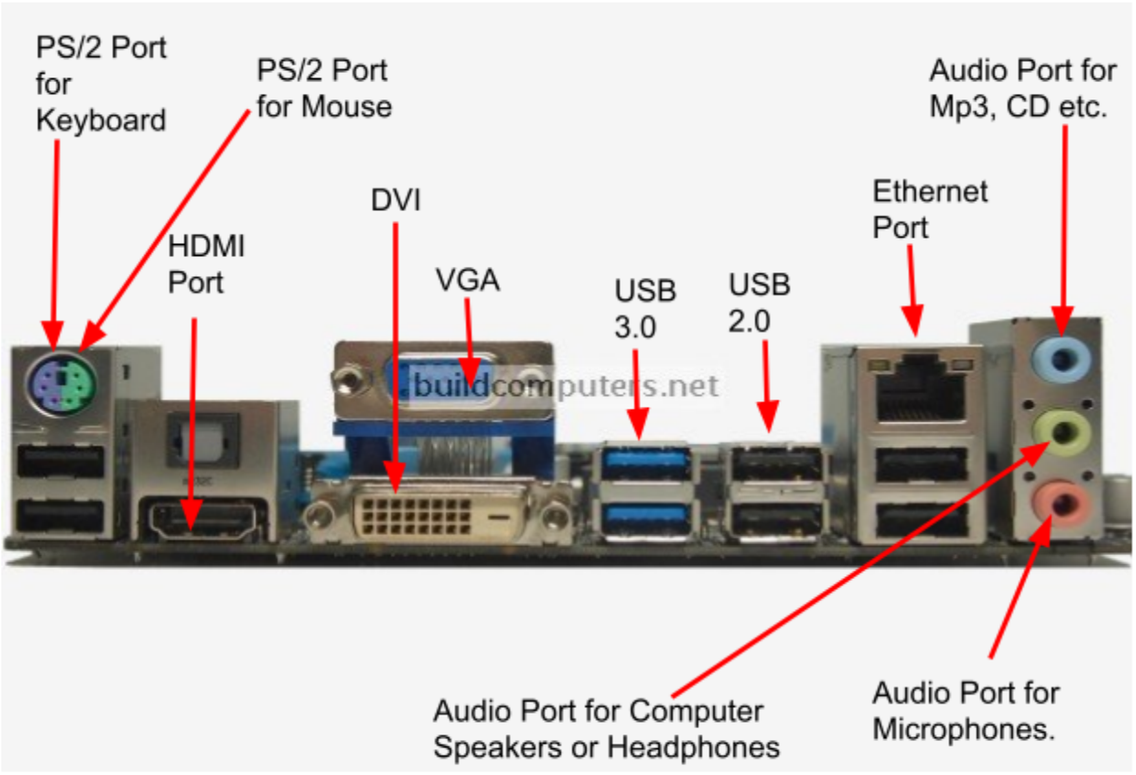
Label the Back panel connectors and ports below by double-clicking on the picture below. Draw an arrow and then use a textbox to label the diagram. Make it as clear as possible.



Use the table below to list each port name above and give a brief description of what it is used for. Use http://www.buildcomputers.net/computer-cable-connections.html as a reference. You may wish to look at other sites as well.

PORT NAME	What does it stand for?	DESCRIPTION & USAGE
VGA	Video Graphics Array	Used to transfer video signals such as connecting your computer to a television screen or monitor.

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DVI	Digital Visual Interface	Used to connect the monitor or a video.
HDMI	High Definition Multimedia Interface	Used to connect audio/video sources.
USB	Universal Serial Bus	Used to connect computers to devices such as digital cameras, printers, keyboards, mouses etc.
Audio Ports	Audio Ports	Used to connect devices like speakers, headphones or microphones.
Ethernet Ports	Ethernet Ports	Used to connect to a boardband modem or/and for a wired connection.
PS/2 Port	Personal System/2 Ports	Used to connect keyboards and mices to a computer.
Computer Power Cord	Computer Power Cord	Used to to power the computer.